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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,484	01/10/2002	Mitsuru Suginoya	S004-4374	8046

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EXAMINER	
NGUYEN, DUNG T	
ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 07/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/914,484	SUGINOYA, MITSURU	
	Examiner	Art Unit	
	Dung Nguyen	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 April 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4,11,13-16,18-20 and 22-30* is/are pending in the application.

4a) Of the above claim(s) *11,13-16 and 18* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4,19,20 and 22-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/27/2006 has been entered.

2. Applicant's amendment dated 03/10/2006 has been received and entered. By the amendment, claims 1, 3-4, 19-20and 22-30 are now pending in the application.

3.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1,3-4,19-20 and 22-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 1, 23 and 26, the limitation of "the falling direction being prescribed in parallel with a phase advancing axis or a phase delaying axis of an optical anisotropy of the first

flexible polymeric substrate" has been recited in those claims; however, such limitation has not disclosed in the original specification.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1, 3-4, 19-20 and 22-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (APA) Figure 7 in view of United States Patent 5,917,569 (to Tanuma et al.) and further in view of United States Patent 5,390,037 (to Negishi).

As to claims 1 (amended) and 23-25 (newly added claims), APA Figure 7 and Specification at pages 1-5 teach and disclose a conventional Super Twisted Nematic liquid crystal display unit and a conventional manufacturing method.

APA discloses polymeric substrates (21 and 24), transparent substrate 22 and transparent electrode 25 upon which are formed orientation films (23 and 26). Continuing the discussion of conventional art, the Specification teaches that an orientation film solidifying process and an orientation process can be continuously performed by using the polymeric substrate (with reference to the conventional manufacturing method p. 2, lines 18-23). APA does not appear to explicitly specify that the orientation film is vertically aligned (VA) and that the substrate moves. However, Tanuma teaches and discloses an LCD with particular rubbing techniques and having different anchoring energies between pixel and non-pixel regions (Title, entire patent). In Tanuma, alignment film (at least 25A) is rubbed to impart a vertical alignment mode to the liquid crystal molecules (See Figure 1 lb, circle magnifying the liquid crystal molecular orientation as

vertically aligned). A substrate is furthermore moved (See Figures 12 and 17). Tanuma teaches and discloses that rubbing of an alignment film and substrate speed are at least two factors that affect light transmittance, operating voltage and anchoring energy (Column 7, Lines 52-67).

Tanuma is evidence that ordinary workers in the field of liquid crystals would have found the reason, suggestion and motivation to select a vertically aligned alignment film and moving substrate relative to the rubbing of the vertically aligned film for at least three reasons: (1) to affect light transmittance, (2) operating voltage and (3) anchoring energy (Column 7, Lines 52-67). Therefore, it would have been obvious to one of ordinary skill in the art of liquid crystals at the time the invention was made to modify APA in view of Tanuma for at least three reasons: (1) to affect light transmittance, (2) operating voltage and (3) anchoring energy (Column 7, Lines 52-67).

APA does not appear to explicitly specify that the substrate is continuously fed from the roll in the longitudinal direction during the second, third, fourth, fifth and sixth process steps. However, Negishi teaches and discloses a liquid crystal molecule orienting method whereby an orientation film is continuously fed and rubbed through a rubbing roll and backup roll (Abstract, entire patent). Therefore, it would have been obvious to one of ordinary skill in the art of liquid crystals at the time the invention was made to modify APA in view of Negishi for uniform and rubbing (Abstract, entire patent).

As to claim 3, Tanuma features illumination by ultraviolet light (Figure 20b).

As to claim 4, Tanuma features alignment by rubbing (entire patent) along the length of the substrate (entire patent).

As to claims 19-20 and 22, a polyimide is used as a material for first and second alignment films (Tanuma, Column 20, first example, lines 53-56).

As to claims 1 (amended) and 23-25 (newly added claims), APA Figure 7 and Specification at pages 1-5 teach and disclose a conventional Super Twisted Nematic liquid crystal display unit and a conventional manufacturing method.

As to claims 26-30 (newly added claims), APA Figure 7 and Specification at pages 1-5 teach and disclose a conventional Super Twisted Nematic liquid crystal display unit and a conventional manufacturing method.

APA discloses polymeric substrates (21 and 24), transparent substrate 22 and transparent electrode 25 upon which are formed orientation films (23 and 26). Continuing the discussion of conventional art, the Specification teaches that an orientation film solidifying process and an orientation process can be continuously performed by using the polymeric substrate (with reference to the conventional manufacturing method spec. p. 2, lines 18-23).

APA does not appear to explicitly specify that the orientation film is vertically aligned (VA) and that the substrate moves. However, Tanuma teaches and discloses an LCD with particular rubbing techniques and having different anchoring energies between pixel and non-pixel regions (Title, entire patent). In Tanuma, alignment film (at least 25A) is rubbed to impart a vertical alignment mode to the Liquid crystal molecules (See Figure 11b, circle magnifying the liquid crystal molecular orientation as vertically aligned). A substrate is furthermore moved (See Figures 12 and 17). Tanuma teaches and discloses that rubbing of an alignment film and substrate speed are at least two factors that affect light transmittance, operating voltage and anchoring energy (Column 7, Lines 52-67). Tanuma is evidence that ordinary workers in the

field of liquid crystals would have found the reason, suggestion and motivation to select a vertically aligned alignment film and moving substrate relative to the rubbing of the vertically aligned film for at least three reasons: (1) to affect light transmittance, (2) operating voltage and (3) anchoring energy (Column 7, Lines 52-67). Therefore, it would have been obvious to one of ordinary skill in the art of liquid crystals

at the time the invention was made to modify APA in view of Tanuma for at least three reasons: (1) to affect light transmittance, (2) operating voltage and (3) anchoring energy (Column 7, Lines 52-67).

APA does not appear to explicitly specify that the substrate is continuously fed from the roll in the longitudinal direction during the second, third, fourth, fifth and sixth process steps. However, Negishi teaches and discloses a liquid crystal molecule orienting method whereby an orientation film is continuously fed and rubbed through a rubbing roll and backup roll (Abstract, entire patent). Please also note that Negishi teaches and discloses the use of two rolls in the formation of the orientation film.

Therefore, it would have been obvious to one of ordinary skill in the art of liquid crystals at the time the invention was made to modify APA in view of Negishi for uniform and rubbing (Abstract, entire patent).

It should also be noted that, re the limitation of "the falling direction being prescribed in parallel with a phase advancing axis or a phase delaying axis of an optical anisotropy of the first flexible polymeric substrate", as best understood as the falling direction being prescribed by continuously moving the first polymeric substrate in the longitudinal direction.

Response to Arguments

Applicant's arguments filed 03/10/2006 have been fully considered but they are not persuasive.

Applicant's only argument is that the references do not disclose an orientation film which is vertically aligned, the polymeric substrate is continuously fed from a roll in the longitudinal direction and the falling direction of liquid crystal molecules as claimed. The Examiner respectfully disagrees with Applicant's view point since, as stated above, Tanuma et al. do disclose a vertical alignment and Negishi does teach a method of feeding an alignment through rubbing roll in the longitudinal direction (figure 1B); and thus, the combination of the APA, Tanuma et al and Negishi would produce a method of manufacturing an LCD as claimed as well. It should also be noted the limitation of "falling direction" has not been examined on merit as a new matter as the above rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung Nguyen whose telephone number is 571-272-2297. The examiner can normally be reached on Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DN
07/10/2006

Dung Nguyen
Primary Examiner
Art Unit 2871